

The construction of trust in medical profession: establishing medical practices and strategies on liver transplantation

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INTRODUCTION

This paper is the result of an ethnographic PhD research into medical sociology (***The Social Construction of Medical Technocracies: the sociological gaze in the world of liver transplantation***) and aims to examine the day-to-day practices within the medical field and its specific, sophisticated technologies. The aim of this investigation is to understand to what extent technologies are instrumentalised in the medical field in order to represent power strategies wielded by the medical staff involved thereby identifying the differing types of technocracies.

The key theoretical guidelines are drawn from the sociology of professions, and medical sociology, particularly the social constructionism approaches, which pointed out the relation between medical power and knowledge and also the role of "discourse" in that construction. In the case of the medical profession, it is important to identify the processes associated with medical working practices based on technology. The recourse to professional authority figures, which can be identified as experts, implies the power to determine certain activities in the expectation that the other actors involved accept such decisions. However, it should be pointed out that such technologies are themselves founded, at least in part, on the result of social processes. Power, as authority, should be understood as the capacity to determine meanings related to specific technologies and their respective practices.

Basically, the aim of this paper is to present some aspects of this study, particularly the social construction of trust between the medical professionals and the role of technology in the definition of frontiers that separate the several areas of medical knowledge (define in medical specialties). This, also include the construction of segmentation schemes inside several medical specialties involved in liver transplantation.

The Foucault perspective is fundamental in the construction of the theoretical model that guides this research. It permits us to understand the resulting meanings from the language utilization, exploiting the power relations in which specific talks are embedded and they contribute for. Foucault's interest by the relations between talk, scientific knowledge and the exercise of power, reveals-itself very important in this work. Thus, the *power/knowledge* notion constituted a fundamental analytic category. In this line of inspiration of Foucault, others contributions like Turner (1995) and Atkinson (1977, 1995) are important, since both stand out the centrality of medical discourse, that settle in the interaction between medical work and technologies, from which themselves construct medical knowledge, in the context of medical practices.

It is therefore necessary to ascertain the meanings and functions of technology particularly in relation to medical knowledge and its linkage to social relations and the

exercise of power. The concept of power in this context does not necessarily refer to facets of oppression or domination but rather a constructive energy represented both in the organization of social relations and the desires and actions of the respective individuals. "Discourse" is also an important factor to be taken into account. Here, discourse can be taken as referring to dialogue, conversation, that which is set down in text or that which can be used to designate a coherent system of meanings (Atkinson, 1995). Thus, the objective is to understand how meaning and power are negotiated through the medical process and the interaction between medical specialties involved in liver transplantation.

The contribution of Strauss *et al.* (1985) is also extremely important on the analysis of the medical work model. The authors use the analytical category of *work* and define the hospital as a set of *workshops* characterized by different types of work with different resources and where, consequently, the division of work is definitely different. The notion of *trajectory*, used by the authors is also very useful and permits us to go beyond a merely theoretical perspective on work organization definition, since the *trajectory* notion is constructed from the actors direct observation, which permits to translate clearly the nature of the work observed.

So, from the model of Strauss *et al.* (1985), through direct observation, we identified and analyzed several illness trajectories and their relation with the different lines of work, identifying a set of tasks in a specific trajectory, which demand permanently a coordination and reorganization in the articulation of several works and respective actors.

This balance may be seen as a constant negotiation between the diverse range of parties involved and where the social arrangements are the result of processes of interaction under constant reorganization and redefinition (Strauss *et al.*, 1985). Hence, the hospital represents a space where actors are, in the main, professionals involved in a process of negotiation aiming to achieve individual interests in a professional environment previously established in accordance with institutional objectives.

The work of Bucher and Strauss (1961) permits us equally to recognize the divergences and cleavages between specialties, where the technological question assumes a fundamental role. Then, we used the analytic category of *segment* presented by the authors, to assign the peculiar specialties that develop while identities inside a profession and organize practices that assure their institutional position. In this way, the contribution of these authors revealed itself important in the identification of the trials of differentiation inside specialties, where the respective elements find differentiate between itself from the private domain of technologies, accentuating this way, the internal segmentation.

The research methodology used has been mostly qualitative including participant observation¹ and forty-eight on site interviews of key actors focusing on identifying the language and behavioral patterns over a period of time. The objective is to provide a sociological approach to the medical field emphasizing the complexities and contradictions for the actors involved the interaction between medical staff and technologies, definitions for constructing medical knowledge and its authority as power.

Liver transplantation is the focus of this research selected. This medical area is particularly sensible to power/knowledge strategies because of the sophisticated levels of the medical cases, technology, medical practices and knowledge involved. A Transplant Unity (TU) of a state hospital in Lisbon represents our field research. This hospital is located in the centre of the city and represents a General Hospital and part of a group of hospitals termed the *Civil Hospitals of Lisbon*, covering a wide area including the city and its suburbs with a population of around 735,000 inhabitants. Services provided include Emergency, Infectiology, Endocrinology, Nephrology, Dermatology, Medicine, Rehabilitation, Surgery and Orthopaediatrics, in addition to being a central hospital with differentiated services in the field of kidney and liver transplants.

SOME NOTES FROM THE FIELD

The hepatic transplantation process is made up of various stages which corresponding to several arrangements on the division of medical labor. These are the result of the interaction between the respective specialists fields involved throughout the entire transplantation process. The input of doctors, usage of the technologies involved, taking of clinical decisions, responsibility for the patient, medical knowledge and the patient relationship all represent, throughout the hepatic transplantation process, factors perfectly divisible between the four main medical specialties involved: hepatologists, surgeons, anesthesists and intensivists.

Throughout observations at the TU, it proved possible to define key scenarios that the researcher had to witness in order to achieve project objectives, amongst which should be highlighted the three phases in the Transplantation Program: pre-transplant, transplant and post-transplant. For discussion in this conference we present some specific contexts observed, which lightly illustrate this PhD research. Then, this paper is limited to presenting some results of the research, particularly the questions related to the workings

¹ Participant observation characterizing this ethnography occurred during a period of two years (December 1999 – October 2001).

of two specialist areas, hepatology and surgery, in relation to technology and the decision making process and the construction of trust among this two medical specialities. It is clear that the data presented represent only singular aspects of the field work. However, based on these results, it is possible to provide certain points for reflection regarding medical practices and strategies around medical technology.

. The Hepatic Transplantation Program: hepatologists and surgeons in the decision making process

The first contact between the patient and the TU is made at an initial consultation where hepatologists are unquestionably the key actors. Generally, patients learn of the Hepatic Transplantation Program from their GP who refers them for consultation at the hospital. Such consultations include the registration of all details relating to the patient's clinical history and a detailed, extremely thorough analysis of the respective exams and medical reports. When necessary, the hepatologist can request further tests to verify or clarify a diagnosis. These are all carried out at the hospital with the patient sometimes being admitted as an in-patient. The next step is the hepatologist informing the patient about the decision on whether or not he/she was accepted onto the Hepatic Transplantation Program. Hence, as from the first consultation, the patient is registered onto the program unless the case raises questions or is unsuitable for transplantation.

The decision on whether to accept the patient onto the Program highlights particularly interesting aspects. Debatable cases such as recurring diseases (malignant tumors and a range of neoplasies), are those situations which raise the greatest doubt and difference of opinions between the medical staff involved in the process. Indeed, they form the basis of discussions at the weekly meetings bringing together all medical specialities and the TU Director. At such meetings, the hepatologist presents the case for discussion with the patient frequently awaiting the decision in the consultation room. In general terms, consensus rules, but, when differences become marked, scientific arguments are brought into play and hold greatest weight. All doctors agree, even those with a more humanistic and less technical perspective that such arguments should prevail.

In some of the observed cases that resulted in divisions of opinion, the surgeons, as well as the Program Director, were called on by the hepatologist to provide their opinion before presenting the case to other participants. As far as could be ascertained, in all such situations, surgeons always agree with proceeding with the transplantation whenever that is the position favored by the hepatologist. The decision not to transplant is usually made

by hepatologists with their reservations backed up by their understanding of the consequences of transplantation on certain patient categories.

In fact, it is amongst hepatologists and surgeons that division emerges in relation to decision taking on whether or not a patient can join the program. Generally, consensus between the specialists is sought. This is not always achieved due to the differing positions on clinical practice. As far as could be ascertained from peer meetings, positions range from the more technicist to the more humanist with scientific and more emotive arguments being presented. However, and while knowing that the scientific arguments will always have to prevail, and a consequent decision not to offer a transplant. However, some times the decision taken by the medical group neither has to be neither unanimous nor even by majority. There have been cases where the surgeons, in opposition to the opinion of all others specialties, decided in favor of transplant. Hence, and as can be concluded, the surgeon is sovereign in decision making with competence for setting down the trajectory of the patient and his/her disease.

Initially, it seems as though hepatologists hold an advantageous position over surgeons in the decision as to whether or not a transplant is carried out in addition to priorities in relation to the waiting list. However, it was possible to identify several situations which illustrate the privileged position held by other participants who should be sharing the same weight in terms of decision making. Several clinical cases observed in the course of this research represent situations where the option not to carry out a transplant was controversial. At a meeting between hepatologists and surgeons it was decided not to accept these cases onto the program. However, after pressure from a surgeon specialized in the area of hepatic transplants, a longstanding member of the unit and the doctor responsible for the patients in question (who had also referred them to the TU), the cases were accepted and the patients in question received a transplant. When one of the hepatologists was questioned on this backtracking from the initial decision, the justification was extremely cautious. An effort was made to put across an image of consensus between all specialists: "after analyzing the arguments, we all decided to review the case and to then accept the patients onto the program" (field note).

This situation illustrates not only certain aspects related to the privileged access of some patients to transplantation through the intervention of a doctor able to completely reverse the initial decision, but also the conditions under which responsibility for the patient is shared. So, the division of labor between the various specialities involved in hepatic transplantation may be understood from different perspectives on the patient, which are institutionalized in the discourse between specialist fields. The contradictions between the differing discourses, that set this two specialist areas, in addition to the points of conflict, enables us to understand the mutual advantage derived from the symbiosis

between hepatologists and surgeons and the potential failures of this symbiosis. Therefore, the division of medical labor should be understood not only between but also within each specialist area and how they learn and invest in specific circumstances taking into account the specialist knowledge acquired.

From the patient's perspective, and perhaps the public in general, the surgeon and not the hepatologist appears as the key element in the decision making process. This was demonstrated at a consultation where a patient was accepted onto the programme. At this meeting, the patient's mother explained that, out of despair, she had contacted a surgeon that she had been told was a specialist in the bile duct as she had decided to immediately go and "talk to God" (field note). The hepatologist, on hearing this expression wasted no time in explaining that there, "God was the hepatologist and not the surgeon, although certain surgeons really like to play the role" (field note). In the discourse of hepatologists, the constant need to affirm their position in relation to the surgeon and the decision making process should be highlighted.

However, in the mutual criticism exchanged between hepatologists and surgeons, there is never any allusion made to the capacities and acquired medical knowledge in spite of each taking different postures and roles regarding the patient resulting from their specific interests. The opposition between the sides is derived from their respective relationships with the subject-patient. To better understand this point, it is relevant to identify two important aspects in the development of the disease: the disease itself and the capacity for the patient to survive and to benefit from the procedures leading to a cure, i.e., that which Fox (1992, p. 62) defined as illness and fitness. These are not contradictory poles but rather two distinct dimensions in the patient's trajectory.

Based on these two dimensions, it is possible to identify the respective positions adopted by the two specialist areas involved in the hepatic transplantation process. Therefore, and in terms of the relationship between hepatologists and surgeons, should conflict arise between the two dimensions, the former, illness, holds the advantage. The decision is therefore likely to be in favor of surgery at least initially as this form of treatment enables the immediate reduction or even elimination of illness in spite of consequences in terms of fitness.

It is in this area that the surgeon holds power over the hepatologist which enables a general understanding of not only the relationship between the two specialist areas and the patient but also the social dimension in terms of authority and prestige. This had been referred to by Fox (1992, p.66) based on case studies in other medical areas. In this case study, for the surgeon, the opposite of illness is health; according to the hepatologist, the opposite of fitness is the lack of capacity to react to the presence of the disease. Such denials of the illness and fitness dimensions are themselves rejected in the discourses

produced by each of the specialist areas. That is, the opposite pole of each of the dimensions is rejected and it is based on such a rejection that each specialist area defines its scope of action. The depth of such antagonism between the specialist areas as constructed discourse serves the interest of each. According to the hepatologist, the fitness of each patient, which also includes illness, is something that has to be increased or at least preserved which does not necessarily imply eliminating the disease. According to the surgeon, reservations as to the state of the patient's health result in the disease as a value to be reduced.

Hence, such antagonism, based on the negation of the perspective that the specialist areas hold on the patient and on disease, has meaning only within the context of the necessary interaction between the specialist areas. This means that there is no meaning apart from the relationship between hepatologists and surgeons. When one of the specialists has a little space to make his/her authority felt, the discourse used by both is in harmony and takes on the logic of a shared speech maintained both by hepatologists and by surgeons. Therefore, discourse in the medical field of hepatic transplantation is articulated via a combination of various types of discourse mediated by the participants, in this case, the surgeons and hepatologists. The respective discourses are linked to the respective technical steps taken in each phase of the hepatic transplantation process. This simultaneously represents both a polarized discourse as well as a shared discourse.

Such aspects in themselves represent a paradox which according to Fox (1992) is present in any medical activity and that is directly related to any process of curing which, whatever the procedure, results in suffering, discomfort and a loss of fitness, at least temporarily. The very meaning of the term *to cure* is paradoxical² and is manipulated, with every show of authority, in the discourse of those providing a clinical input, and as used by hepatologists against surgeons. However, when confronted by such a paradox, in the case of transplantation surgery, where a life is not only saved but also the quality of life improved, the surgeon's authority and prestige are left reinforced. The surgical techniques used to remove the disease and correspondingly the patient's suffering thus legitimates the role and actions of the surgeon. The act of transplantation causes suffering and low levels of fitness, though this is always temporary and foreseeable to such an extent that the surgeon uses the term post-operation to refer to it. However, the concern of the hepatologist is not so much this period but rather the later recovery of the patient when the surgeon is no longer following the patient's progress. The surgeon is only concerned through to the point when the patient has recovered from the operation. He/she then

² The expression "if the disease doesn't get you then the cure will ", reflects this paradox, where the procedures resulting in a cure for the disease themselves affect, in the majority of cases, the patient's health.

withdraws from the scene leaving to the hepatologist the maintenance and future physiological condition of the patient. In turn, it is precisely that future of the patient and his/her fitness after recovering from surgery that concerns the hepatologist. Hence, arguments presented on the decision whether or not to carry out the transplant revolve around this question, the costs in terms of fitness after the post-operation recovery phase. However, the success or otherwise of surgery is the surgeon's problem who remains tied to the transplantation phase and the post-operation phase.

The decision to accept a patient onto the Hepatic Transplantation Program immediately results in an individual case-file. This file is made up of all medical notes, exams, consultations, observations, operations, medication and all other clinical information dating from acceptance onto the program. Therefore, all information about the patient is constantly updated and filed for reference. All such information is centralized so that any TU member of staff, doctor, nurse or the administrative staff can gain immediate access at any time.

After meeting all the conditions necessary for transplantation, the patient is put on what is termed the active list made up of all patients who are ready for transplantation at any moment. The management of this list and decision taking as to priorities is entirely the responsibility of the hepatology team. Although decision making is not linear, it is far from being as complicated as acceptance onto the Transplantation Program. For all cases, there are timelines by which patients are to receive transplantations that can be established by hepatologists through monitoring test results. This determines the point at which the patient can no longer wait for transplantation or else run the risk of none recovery. These estimations are made according to established criteria, multi-variable calculations, statistics, estimates established by medical experience and as published in specialist publications. To this end, it is extremely difficult for hepatologists not to be in agreement with active list priorities. The decision is reached through a comparison of the medical diagnostic results with the scientifically established criteria. The exception is full-blown hepatitis which takes priority on the active list. Waiting time varies according to the pathology, the seriousness, progress of the disease, the blood group and other patient characteristics such as weight and age.

. *Some data about transplant surgery*

As from the moment when the Lisbon Region OCCOT³ contacts the TU to inform of the availability of a donor, the TU team begins transplantation preparations. In spite of the process being liable to interruption should there be an *emergency warning*, or the donor

³ Office for the Co-ordination of the Collection of Organs and Transplantation.

failing the conditions required, as is the case with certain diseases, hepatologists, surgeons, anesthesists, intensivists, nurses and administrative staff immediately swing into action and begin preparations.

From the very beginning, the information provided by the OCCOT includes three essential characteristics determining the choice of recipient: age, weight and blood group. Where liver transplants are concerned, these are the only details necessary to determine organ compatibility so the hepatologist can proceed with choosing the recipient via consultation of the active list. Then, already in possession of the tests carried out on the donor liver, supplied by the OCCOT Anatomy Pathology and should the organ prove to be suitable, the duty hepatologist enters into contact with the patient who heads immediately to the TU where all procedures necessary for preparing the patient for transplantation begin.

Simultaneously, TU surgeons organise a surgical team (generally those on duty that day) to collect the organs (in the TU case, liver and kidneys) from the hospital where the corpse is. Generally, it is the same team of surgeons which collect the organ as that which transplants it. Meanwhile, nurses and the administrative team have to organize all the work connected with the transplants such as checking all the material and equipment for the operating theatre, contacting the nurses who will be on duty along with the anesthesist and all the technical staff required for the operation in addition to ensuring the availability of the operating theatre and the Intensive Care Unit (ICU).

A hepatic transplant takes between eight and twelve hours with six surgeons in attendance (as well as any others undergoing training), two anesthesists and four nurses (two circulating, one instrumentalist and one anesthesist). However, TU members made it possible to understand certain aspects about the organization of the labor and decision taking during that stage. Technically, a hepatic transplant is highly dependent on the characteristics of the organ, the type of surgical operation as well as the techniques and technologies used on all levels as well as the risk to life involved. This is highly coordinated teamwork where nothing can go wrong. There is also a great deal of tension among all professionals present as anything might happen and where a redefinition of surgical strategy is a constant possibility. Regarding this aspect, the account of the nurses, stands out due to the level of admiration and passion for the medical work and technologies involved. Furthermore, they recognized that decision making in the operating theatre is difficult to explain because this is a multidisciplinary situation where all members are essential at every moment. "Should the anesthesist say that it cannot be continued, the surgeon stops immediately, without any questions. Should the assistant radiologist be missing from his function of checking the position of the catheter placed at the beginning of surgery inside the heart, aorta and lung in order to carefully control the heartbeat and

blood pressure, the transplant is not carried out. And we are not talking about a doctor but about an assistant radiologist."(field note).

The power and authority of the surgeon above all rests on the techniques and high risk strategies involved in transplantation surgery. The surgeon's denial of the damage caused by surgery in terms of fitness, the strategies used to avoid this type of definition represent the way in which risks to the patient, until he or she leaves post-operation, also represents risks for the surgeon with the advantage of those being restricted to this phase of the transplantation process. This is a limited, short-term period of risk representing, however, the highest, most stressful point in the entire process be it in terms of patient survival or in terms of the success the surgeon is able to claim due to the nature of the risk involved in the surgery and the technology. This is a high price in terms of authority and prestige.

. Dividing the post-operation patient between surgeons and hepatologists

After transplantation surgery, the patient is taken to the ICU of the respective hospital generally for around three or four days. In the ICU, the patient's medical care will be handed over to intensive care specialists and nurses, with hepatologists only intervening to prescribe medication related to hepatic functions. Furthermore, surgeons and anesthesiologists remain in constant contact with the ICU in order to evaluate and accompany the patient's clinical state. However, the key actors in this transplantation stage are the intensive care specialists who constantly monitor and control the vital parameters (pulse, blood pressure, temperature) the cardiac, lung and kidney functions as well as the state of the transplanted liver.

With the clinical situation stabilized, the patient is transferred to a ward where he/she receives a daily visit from the hepatologist and the surgical team as well as being required to undergo new daily tests to monitor the condition including, as far as was understood, daily analyses, abdominal scans, Doppler scans of the portal vein and the hepatic artery and other exams. The patient progressively resumes previous dietary habits and, in some cases, is able to resume other pre-disease habits and routines.

In the post-operation phase, it also proved possible to identify certain types of technology that were well defined by each specialist area. Throughout the first weeks, a considerable amount of medication is administered, initially intravenously and later orally, in order to prevent rejection of the transplanted organ. Technological innovation in such medication has been a constant in the hepatic transplant field and is totally controlled by hepatologists. The appearance of new immuno-suppressor drugs has completely revolutionized the results achieved by hepatic transplants. They have enabled a

turnaround in mortality rates as, after their introduction, 80 percent survive for over 5 years after transplantation.

Regarding clinical exams determining the state of the patient's health throughout this phase, in addition to daily blood tests, there are currently some sophisticated techniques being applied. One example is the *colangiography* which test the bile ducts constructed by the surgeons and the CPRE, a specific endoscope that allows the visualization of the pancreas and bile glands using sophisticated equipment and techniques and operable by only a few hepatologists. The division of labor between hepatologists and surgeons, depending on which application of technology is in question, is very clear and defined by the usage of the said technique. The ward waiting room represents an extremely important scenario for this research. It is here that the hepatologists and surgeons usually remain before and after their daily patient visit, reviewing the process, checking notes, adjusting medication levels and requesting medical exams. It is generally in this scenario that hepatologists and surgeons exchange views on the clinical state of patients and adjust their joint strategies. It is also at this point in the transplantation process that the relationship between surgeons and hepatologists reaches its high point, mutually negotiating control of the patient.

Hence, even after surviving surgery and back on the ward, the position that the surgeon takes in relation to the patient's condition remains that of power. Denying surgery as the opposite pole to fitness, through careful discourse, the surgeon manages to sustain the definition of the post-op patient as a success of the surgical act. This strategy utilized in discourse never leaves the surgeon open to alternative situations, i.e., even in less satisfactory and less successful cases, silence is there as a defense. Intervening only after the transplantation stage, the surgeon sometimes tries to dominate the situation even under the critical gaze of the hepatologist. One day, in conversation with a hepatologist and a surgeon about this PhD research, the former, in a semi-jocular tone, had this to say about the interdisciplinary nature of hepatic transplants and the hepatologist-surgeon relationship. "Do you know who's boss here? The surgeons are. That's the way it is, they ask us what we think. We reply "A" and they listen attentively, saying that they will proceed with "B" because that is what they take as best. That is the interdisciplinary nature of the TU" (field note).

Furthermore, according to one hepatologist, the diagnostic technologies and the techniques required in this post-operation phase are shared between the two specialist areas but the surgeons carry out the colangiography "as the hepatologists let them do it because they have already put the new organ in" (field note). It was thus possible to understand the advantageous position held by the surgeon over the hepatologist that allowed him to take control of this technology. However, from the point of view of the

hepatologist, this is more of a concession, a prize for having successfully completed the surgical operation.

As for the CPRE, only one of the TU hepatologists is trained in using this technology. Whenever this exam is required, this doctor goes with the respective patient to another hospital in the Lisbon area as there is currently no CPRE equipment at the hospital incorporating the TU unit. This is extremely sophisticated technology which "the hepatologist will not pass up on as he's the specialist in the area." (field note). Regarding all the other technologies involved, even those not directly operated by the hepatologist or surgeon, there is always the need for someone who knows how to read the results. i.e., even imaging exams or clinical analyses are evaluated by doctors be they hepatologists or surgeons. Hence, these doctors reserve authority, based on their medical knowledge and experience, for interpreting information and decision making.

After a number of weeks on the TU hospital ward (between five and eight) the patient is discharged. He/she is provided with a report including all information on his/her surgery, medication, exam results and clinical developments. As from that moment, the patient remains linked to the TU with the first consultation due in a week. Throughout the next six months, the patient is seen twice a week by the hepatologist. This routine consultation evaluates, through blood analyses, the level of medication dependent on the functioning of the hepatic and renal functions. Surgical control and evaluation as to how the transplantation is proceeding sometimes require hepatic biopsies in order to determine the possibilities of rejection or infection. In the first months, it is also necessary to deal with certain situations that may require further operations. However, step by step, the surgeon's role is marginalized leaving the path clear for the hepatologist who will accompany the patient throughout the rest of his/her life with an admirable sense of possession.

TOPICS FOR DISCUSSION AND FINAL NOTES

In this hepatic transplantation unit, we are, clearly, before a service with an extremely complex technical component level. This can be seen through the medical care model, where we can verify the coexistence of heterogeneous medical practices in the output of medical care, consequence of the medical hyper-specialization of TU. This complexity in medical care output, marked by distinct conceptions and gazes about the illness (valuing the illness, a particular organ or techniques) is constantly negotiated through a scientific talk that justifies it, existing together in a dynamic way, several approaches around a same clinical case.

The connections between different medical specialties to diverse technologies are intrinsically related with the aspects that concern the manipulation and application of the

equipment and techniques, and with the interpretation of the information produced by the peculiar technologies. So, TU, where several hyper-medical specialization areas flow into, assumes private forms of organization where several teams articulate their work in the frontiers that separate them and not in a constant association along all the hepatic transplant process. Therefore, the medical knowledge convergence is made in contexts where is absolutely necessary a conjoint decision making, contouring itself the need of making a most systematic and permanent convergence.

Analyzing the contradictions between the differing medical practices between the four main specialist areas (here only illustrated by hepalogists and surgeons), enables us to understand that different medical technology plays a key role on the definition of frontiers that separate the several areas of medical knowledge (defined in medical specialties). This, also include the construction of segmentation schemes inside several medical specialties involved in liver transplantation. Such a situation is clearly illustrates not only by certain aspects related to the privileged access of some patients to technology (transplantation technology) through the intervention of a doctor with authority, (understood as power) able to completely reverse the initial decision, but also the conditions under which responsibility for the patient is shared. Thus, the division of labor between the various specialties involved in hepatic transplantation may be understood from the respective perspectives on the patient (different views). These differences are institutionalized in the discourse between specialist areas enabling an understanding of the conflict between them.

The strong interdisciplinary nature that characterize hepatic transplantation work, results, some times, in tensions between several therapeutic conceptions and technical orientation witch correspond to distinct options that mark the differences between medical specialties, increasing the ditch that separates different gazes and postures about the illness. The different specialties defined their work in opposite ways. In several situations they even define the clinical problem in a very peculiar way.

Based on the data collected, the mutual need for co-operation between specialist areas is emphasized while simultaneously and constantly seeking to alter the balance in the existing relationship in order to extract advantage, maximize opportunity and increase authority. It is in such situations that conflict emerges. Each specialist area attempts to maintain and reclaim its authority, with each taking on a different role in relation to the patient dependent on their particular interests. The opposition stems from the relations each speciality maintains with the patient he/she shares with other colleagues, requiring exchanges, thereby suggesting a basis for co-operation.

So, medical specialties interdependence is associated to power differences and to consequent conflicts by the demarcation and domain of territories. In this way, we verify

situations where some group of specialists claims authority to interfere in areas that they go for beyond their technical competence, in domains that belong to others, in spheres where others claim the exercise of their knowledge and qualifications. In these contexts, where knowledge, qualifications and roles overlap themselves, the conflict that involves the occupation of some territories implies, necessarily, complex trials of negotiation.

In medical specialties where does exist a more accentuated common patrimony, many times overlapped by the proximity in terms of medical specialization, the conflicts and divergences become more evident in the domain of knowledge and technologies. By the contrary, in contexts where the intervention of each specialty is clearly delimited from a frontier between medical and surgical care, the conflict is softened by knowledge complementarities and specific techniques. In general terms, we are able to confirm that is from the control and specific application of technologies that each medical specialty and each of their elements, in private, constantly negotiate their power.

Hence, based on such points, it can be stated that the social processes through which all groups involved in the hepatic transplant process approach their work and affirm their authority as power are partially constructed through technical procedures dealt with daily by each of the specialist areas involved. As Bucher and Strauss (1961) sustains, we are before medical specialties organized around specific goals and, therefore, technologies and specific practices. So, each of the segments seeks to dominate an area, that we call technological, claiming for itself the domain of a specific field from the medicine. Adds that, inside of each specialty, the several elements that constitute the team seek to differentiate themselves through the control of specific technologies. In this way, even inside each medical specialty there are different kinds of work organization in what concerns the several elements of the team, accentuating, this way, internal segmentation. Therefore, differences in terms of methodologies and practices cross a same specialty. The several segments aim to assume strong interdependent relations and to be receptive to each others. So, it is quite impossible to analyze an isolated element without considering the remainders. Finally, the individuals that lead these segments are recognized by their status in the area – they operate from positions of institutional power.

This way, medical specialties define their medical technocracies, imposing their perspectives and medical practices, using technologies and procedures to them associated. Each individual element, or in assembly, strengthens their strategic positions in its relations with the others. Being like this, we may affirm that the construction and reconstruction of different technocracies supports itself in an interdisciplinary work, where each specialty exercises its specific techniques and assures the inherent medical care to its specialty, acting when necessary in emergent situations, supplying the security guarantees to the other specialties involved. At the same time that each specialty reinforces its own

technocracy, assures the necessary conditions for that the other specialties do the same. Different techniques, gazes and valuation of the results translate the intervention limits.

So, they are drawn the several roads that drive to the construction of different medical technocracies, grouped in medical specialties and which are possible to identify from the permanent interactions, constructing trust ties between the several specialists and specific technologies that they manipulate and control in medical practices. This way, all the hepatic transplantation process (that in its whole can be translated in a medical technocracy) expresses itself from the diversity of medical practices, of the which was possible to detach the construction and reproduction of the medical knowledge, the medical talk and the medical decision making process.

In hepatic transplantation, knowledge and medical talk constitute the fundamental elements of medical technocracies, constituting their self's as technologies of power, by excellence. These two elements are built in the daily life of the medical practices, and the clinical experience assumes a fundamental function in that construction. In constant relation, these two elements reproduce themselves in the medical practices, scattered in time and space, between the clinical experience and the scientific research.

The clinical experience assumes a central role in the construction and reproduction of medical knowledge, in face of others process like scientific research or theoretical apprehension of knowledge. From the clinical practice, the clinical cases constitute important material from which the doctors of several specialties collect information and reconstruct medical knowledge. In terms of liver pathologies diversity and therapies to them applied, medical knowledge renews-itself constantly from the medical practices daily life. Even so, every specialties considers fundamental the scientific research component, evoking the difficulty in reconcile the research activity with clinical practice, by the hospital and TU profiles, that influence the ways through which medical knowledge himself reproduces. The TU nature is especially linked to the production of medical care and not to scientific research. This fact shapes the forms of reproduction of medical knowledge that predominantly is built in the clinical practice.

In these circumstances the reproduction of medical knowledge is almost restricted to individual clinical practice. The absence of a joint scientific research work involving all specialties, in fact, characterizes the TU. So, it seems that there is no direct links between multidisciplinary medical practices, which produce a joint knowledge, and the reproduction of that knowledge from a multidisciplinary scientific research.

From the construction of medical knowledge and medical talk we reach the exercise of several medical technocracies that can be observed on contexts of decision making which are deeply dependent of that construction. Medical decision making constituted the most

complete form of exercise of medical technocracies, result from the construction between different knowledge's and talks, visions and strategies. On this process of medical decision making, different medical knowledge's and practices correspond to peculiar talks and they influence it mutually, ending up fuse under a final form of talk. However, in this convergence last talk, some of the talks dominate the others.

The decision making process throughout hepatic transplants rarely takes place simply or discretely. On the contrary, decisions are produced and shared by various members of the medical and surgical teams where a distribution of medical knowledge between specialist areas is visible. Clinical decision making, as far as was possible to identify in this current study, does seem to contrast, and in accordance with Atkinson (1995, p.49), with traditional analysis of decision making. Covering certain points raised by studies in this area, the author refers to the main contributions to medical decision making identifying certain deficiencies in approaches to this question. Studies using statistical models or computer simulations, or in the field of experimental psychology, reflect portrayals of decision making in the real world and little else. They only enable us to understand how these approaches represent this reality, simplifying or even distorting it (Atkinson, 1995, p.51). To this end, the author suggests using these models and simulations as if they were *ideal types*, contrasting them with direct observation and sociological considerations.

In relation to this, Atkinson (1995) refers to the existing contrast between the decontextualised versions of clinical decision making and the sociological approach which repeatedly draws attention to the means and manner in which social characteristics and contexts influence decision making. In the case of hepatic transplantation and the work of hepatologists and surgeons, patient characteristics such as age, ethnicity, social status may all affect the decision making process. The taking of a decision in such a case is not an isolated and specific result of a social vacuum. It is also no detached process but rather one which is susceptible to molding by social influences. Action and knowledge do not linearly converge to produce a coherent network of actions in relation to decision making. The diverse specialist areas define their own labor and interests in contrasting manners. This comes in addition to the daily working demands varying between each specialist area and differing across space and time.

So, in addition to the question of the actors involved in the decision making process, there is also the question of time which, generally speaking, is fairly restricted. Time impacts on the entire process creating the illusion that decision making represents a roughly unitary act, short-term and based on a simple sequence of cognitive acts. However, in many contexts, the timing of the decision may be far more diffuse, extended or cyclical, as the decision making process may be dispersed through the division of labor. This involves differentiated segments characterized by time, schedules, routines and

differing priorities and deadlines. The very medical division of labor is not just a differentiated distribution of knowledge but also a division of tasks and procedures across very different timeframes. The timing of decisions and participant actions seems to rest on a different temporal order, i.e., in medical practice, the time available to decide is complex and multiple.

Still, there is the question of space in medical decision making. Decisions taken based on diagnosis and therapy are not restricted to a single space. Throughout a complex division of labor, the relevant information to reach the diagnosis is dispersed across timeframes. Again, this is a process involving many different actors but the question is far more complicated. Each facet of clinical practice organization generates its own information, a superabundance of decision, the product of work carried out in the respective sectors: clinical laboratories, imaging services, etc. Each produces its own information, reflecting the various forms of representation, in turn, itself forming a product which is the produce of a decision making process then subject to various interpretations. These involve their physical translation (from one space to another) and discourse (from one linguistic register to another).

The process of decision making tends to be portrayed as a private and individual matter. In the case of medical practice, the model used is the ideal first meeting between patient and doctor – the consultation. While, from an experimental point of view, this model is reasonable, from a sociological perspective, this is a partial, reductive approach to medical work. Medical practice takes place in varied, complex organizational scenarios, in differing spaces and times, with the taking of a decision a collective organizational activity. As we had the opportunity to witness in observations carried out at the TU, “the decisions” represent a source of debate, negotiation and even revision of medical knowledge based on an exchange of words between and within specialist areas.

Consequent to these differing styles and interests, clinical information should not be taken as an unquestionable fact. The degree of confidence in the information noted down on the patient’s daily record either as information or the existence of differing diagnoses is highly dependent on who observed the patient and produced such information.

On the contrary, the technical division of labor and the differentiated division of knowledge between the respective specialists means that the specific contributions and information produced take on a privileged role in the decision making process. For example there is the case of the clinical pathologist who, in this case, is frequently called upon to determine the state of the donor liver in the immediate run up to the transplant. This is done through carrying out a hepatic biopsy and tissue analysis. Whatever the result of the tests carried out, his/her opinion will prevail in the decision taken and adopted as definitive.

Hence, the action of taking decisions represents one of the most important moments in the hepatic transplantation process. It inherently involves more than one medical field which results in different points of view in terms of knowledge and experience in addition to differing interests.

So, the varied information for decision making is to be found dispersed across various specialists throughout the entire organization in differing times and spaces, pouring out of the observation unit in question. The sharing of such information is always mediated through the interpreting of exam values and results supplied by specialists at a certain point in the process. This is independent of whether or not knowledge is gathered through informal encounters, meetings to discuss cases, through a narrative and rhetoric shared by the various medical specialist areas. Along with information dispersed across space and time, distributed by various individuals and specialist areas, the discussion, debate, negotiation and decision processes are equally dispersed. Hence, it can be stated that the medical decision making process is anything but an isolated act.

This way, TU assumes a strategic role in the hospital, conferred by his sophisticated nature of medical care, as well as of the technologies and competences that entails. This permits to establish the TU as a powerful and competitive resource for the hospital where is inserted. Therefore, we verify the presence of several interdependencies around the position that this unit assumes, regarding a specific hierarchy of meanings and values that do of this service, the first motor element from the hospital institution. In this way, medical specialties presents in the hepatic transplantation constitute true doctors elites oriented for the medicine of tip, marking a dominant position in the interior of the hospital.

On the other hand, we established the dynamic nature that TU confers to all the hospital. By its characteristics, this service involves all the other medical services of the hospital, functioning like a development catalyst of the others hospital services. Then, for beyond the medical specialties involved in the service, there are other medical teams that, although not directly related to TU, lend a essential contribution, as they dominate specialized medical areas, witch are fundamental in the hepatic transplantation. The demand created by this unit is so high, that several services were confronted with the need of create new adjustment mechanisms in the respective models of organization of the work.

Then, we can affirm that the peculiar moments of medical decision making are the reach and, at the same time, the source of several power/knowledges, witch express their selves in medical care where different medical technocracies are fully exercised. Also, it is from constant negotiation between different medical technocracies that we reached the different stages that mark patients and illness trajectories. From complex negotiation trials, trust ties

between medical specialities and medical decision is constructed. The several talks reflect different kinds of medical knowledge and strategies.

In this research stayed clear that all medical specialties hold power, although in a contingent and frankly precarious base. They constantly need to show and prove that their skills and knowledge are legitimated. To this purpose is interesting to refer the several strategic alliances constructed around medical cases, between diverse elements of different specialties. In these contexts we verify, frequently, the joint construction of arguments that involve complementary knowledge that reinforce argumentation.

In medical decision making it was possible to establish the ways from which the different medical specialties do made feel its weight, not only in the aspects regarding the patient's trajectories, but also in TU strategic definitions. All kinds of medical decision processes involve a joint construction between medical specialties, where two of them, hepatology and surgery assume the main role. However, from the equilibrium between these two forces that constantly negotiate and readjust strategies, the surgeon takes a highlight place in all this process, regarding the hepatologist.

Despite well draw the limits of intervention of each medical specialty, it is in frontiers lines between them that surgeons assume a prominent role. This aspect is reflected in several aspects, namely the fact that the TU constitutes a surgical hospital service, run by a surgeon, and not one of medicine. On surgery all knowledge that are scattered by the several medical specialties in the liver transplantation, converge. The surgeons, and not only the TU director, do the connection with and between the other medical specialties, in a transmission strap sort. Then, this peculiar medical technocracy imposes itself over the others, by its capacity in absorb and filter several postures, gazes, and knowledge. Also for the patient, the surgeon personifies the scientific knowledge, the technical competence that made accomplishable the liver transplantation.

Then, we may affirm that medical power, translated as knowledge and specific medical domain of technologies, has the capacity to defined and impose the meanings and forms that medical practices assume. By that, in the output daily life of medical care the technologies are used on construction of power strategies, being possible to identify different medical technocracies that crossed in the complex net that constituted liver transplantation activity.

Therefore, the question of authority as power should be considered as a fragmented, non-unitary, phenomenon mediated through the access that each respective actor enjoys to that which is understood as knowledge in a defined social context. The professional authority of doctors, understood as knowledge and mastery of specific medical technology, has the power to define and impose meaning and forms on the medical practices taken. In the field of medical care, technologies are therefore instrumentalised in order to represent

strategies of power wielded by the respective specialist areas involved, making it possible to identify the different types of technocracies interacting in the complex network that represents a hospital organization.

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